

Express Mail Label No. EL568948202US
Divisional of U.S. Serial No. 09/262,378
"Saline Soluble Inorganic Fibers"
Filed: October 24, 2000
PRELIMINARY AMENDMENT

Amended
--14. A method of insulating an article against temperatures which may on occasion exceed 900°C comprising:

disposing on, in, near or around the article thermal insulation which is a refractory insulating material having a maximum service temperature greater than 900°C and comprising vitreous fibers having a composition comprising SiO₂, CaO, MgO, and optionally Al₂O₃, wherein:

(a) SiO₂ is present in an amount (1) greater than 58% by weight SiO₂, if the amount of MgO in the composition is in the range 0 through 10 percent by weight; or (2) greater than the sum of (58 + 0.5(weight percent of MgO - 10)) percent by weight SiO₂, if the amount of MgO in the composition is greater than 10 percent by weight;

(b) an amount up to 42 percent by weight CaO;

(c) an amount up to 31.33 percent by weight MgO., and

(d) 0 to less than 3.97 percent by weight Al₂O₃;

wherein the refractory insulation material has a maximum service temperature greater than 900°C; the refractory insulation material has a shrinkage of less than 3.5 percent when exposed to a temperature of 1000°C for 24 hours, and has a shrinkage of less than 3.5 percent when exposed to a temperature of 800°C for 24 hours; and

wherein the refractory insulation material is essentially free of alkali metal oxide and boron oxide fluxing components.--

--15. The method of claim 14, wherein the amount of SiO₂ is less than 70 percent by weight. --

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--16. The method of claim 14, wherein the vitreous fibers crystallize as wollastonite, pseudowollastonite, or a mixture thereof after exposure to a temperature of 1000°C, and wherein said wollastonite, pseudowollastonite, or mixture thereof comprises:

- (a) 60 through 67 percent by weight SiO_2 ;
- (b) 26 through 35 percent by weight CaO ;
- (c) 4 through 6 percent by weight MgO ; and
- (d) 0 through 3.5 percent by weight Al_2O_3 . --

--17. The method of claim 14, wherein the vitreous fibers comprise:

- (a) a maximum of 71.24 percent by weight SiO_2 ;
- (b) 4.46 through 34.49 percent by weight CaO ;
- (c) 1.71 through 22.31 percent by weight MgO ; and
- (d) 0 through 2.57 percent by weight Al_2O_3 . --

--18. The method of claim 17, wherein the vitreous fibers further comprise:

- (e) 0 through 0.65 percent by weight Na_2O ;
- (f) 0 through 0.13 percent by weight K_2O ;
- (g) 0.08 through 0.4 percent by weight Fe_2O_3 ; and
- (h) 0 through 1.23 percent by weight ZrO_2 . --

--19. The method of claim 14, further comprising forming said vitreous fibers into a bulk, blanket, block, or vacuum-formed form.--

--20. The method of claim 14, wherein said insulated article is occasionally exposed to a temperature above around 1000°C.--